

REMARKS

In the Office Action of Paper No. 4 Claims 23 and 24 were objected to for not providing antecedent basis for "baffle" recited in the claims. These claims have been amended herein to remove the word "baffle". It is therefore believed that the amendment of the claims overcomes the basis for the rejection.

Claims 1-3, 5-13, 15-18 and 20-24 were rejected as being obvious under 35 USC § 103(a) in view of the U.S. Patent of Daniels No. 5,563,461, the U.S. Patent of Rew No. 6,411,000 and in view of the U.S. Patent of Gilliland, et al. No. 5,714,819. Of these rejected claims, Claims 9-13 and 15 have been cancelled herein. Claims 1 and 16 are the only remaining independent claims of the rejected claims. It is respectfully submitted that the disclosures of the three references do not disclose or suggest the subject matter of Claims 1 and 16 and therefore fail to provide sufficient information to the ordinary skilled artisan to render the subject matter of Claims 1 and 16 obvious.

Claim 1 recites an air flow directing baffle comprising a plate having an interior surface that faces toward a dynamoelectric device, an inner edge of the plate extending around a center hole passing through the plate, and an annular lip that extends around the center hole and projects outwardly from the plate interior surface. Claim 16 also recites a plate having an interior surface that faces toward the stator, an inner edge of the plate extending around a center hole through the plate, and an annular lip extending around the center hole and projecting axially outwardly from the plate interior surface toward the stator. The annular lip construction recited in both Claims 1 and 16 is not disclosed or suggested by the Daniels or Gilliland references. Although cited in the rejection, the Rew reference was not relied on in any of the rejections of the claims.

The Daniels reference discloses a fan 23 within a motor housing 3 that moves air through the motor housing from air vents formed in a first end shield 13 of the housing to air outlet openings 25 formed in the opposite end of the housing shell 3. A baffle 31, interpreted as

the plate of Claims 1 and 16, is mounted in the motor shell 3 between the motor and the fan 23. The baffle has an upper surface 35 that opposes the motor in the same manner as the inner surface of the plate recited in Claims 1 and 6. However, the baffle upper surface 35 slopes away from the motor as it extends radially inwardly from its peripheral edge as shown in Figure 3 and described in the Daniels' specification (column 3, lines 17-19). An axial surface 37 extends from the radial inner edge of the upper surface 35 and defines a radially inner extension of the baffle 31 (column 3, lines 19-21). Thus, the axial surface 37 projects from the inner edge of the baffle axially away from the motor.

In contrast to this, both Claims 1 and 16 require that the annular lip project outwardly from the interior surface of the plate which is defined as the surface that faces toward the dynamoelectric device in Claim 1 and that faces toward the stator in Claim 16. Thus, the axial surface 37 of the Daniels' baffle 31 actually teaches away from the subject matter of the invention recited in Claims 1 and 16. For this reason, the Daniels reference does not remotely suggest the subject matter of Claims 1 and 16 to the ordinary skilled artisan, and Claims 1 and 16 are clearly not obvious in view of the Daniels reference disclosure.

The shortcomings of the Daniels reference disclosure are not overcome by the disclosure of the Gilliland reference. The Gilliland reference discloses a fan employed with a motor that is not analogous to the fan disclosed in the Daniels reference. In the Daniels reference the fan operates to first draw cooling air across the motor. The air then passes through the fan and the fan then pushes the air and exhausts the cooling air from the motor housing. The Gilliland reference discloses the exact opposite arrangement. In Gilliland the fan 15 draws air in through the air-flow opening 20 of the shroud 19. The air passes through the fan 15 and is directed through the end bracket 14 and then to the motor assembly 12.

Because the Daniels motor fan and Gilliland motor fan operate to cool their respective motors in exactly opposite fashions, with the Daniels fan drawing air across the motor and then through a baffle and the Gilliland fan pushing air through a baffle and then across the motor,

there is no suggestion in the prior art references of combining their teachings together to create the subject matter of the invention recited in independent Claims 1 and 16. For this reason, it is respectfully submitted that independent Claims 1 and 16 are allowable over the prior art of record.

Claims 2, 3 and 5-8 all depend from Claim 1 and Claims 17, 18 and 20-24 all depend from Claim 16 and therefore are also allowable over the prior art of record.

Furthermore, the purpose served by the annular lip of the invention recited in Claims 1 and 16 is to channel cooling air close to the stator end turns of the electric motor and to produce a smooth stream of air exhausting from the electric motor through the baffle opening surrounded by the annular lip. As pointed out above, the Daniels reference teaches away from this subject matter by providing an axial surface 37 at the inner edge of its baffle 31 where the axial surface 37 projects away from the motor winding end turns. The opening 20 of the Gilliland shroud member 19 is spaced from the winding end turns of the stator 47 by the baffle 14, the baffle plate 18, and the fan 15. The inturned edge of the shroud opening 20 does not function to direct air flow through the opening. Because neither the Daniels nor Gilliland references are remotely related to the problem of directing air flow close to the stator winding end turns and then directing the air flow smoothly out of the motor interior as is the annular lip of the present invention, it is respectfully submitted that the Daniels and Gilliland references do not remotely suggest the subject matter of the invention recited in Claims 1 and 16. For this additional reason, it is respectfully submitted that Claims 1 and 16 and their associated dependent claims are allowable over the prior art.

It is also pointed out that dependent Claim 2 which depends from Claim 1 and dependent Claim 17 which depends from Claim 16 require that the annular lip have a convex surface. The word "convex" is commonly understood to mean curved or rounded like the exterior of a sphere or circle. What is interpreted as the annular lip of Claims 1 and 16 is not identified in the Gilliland reference in the rejection of these claims. It is assumed that inturned

edge of the shroud 19 that surrounds the shroud opening 20 is being interpreted as the claimed annular lip. It is clear that the inturned edge of the shroud opening 20 is not a convex surface nor does it remotely suggest a convex surface. For this additional reason, it is respectfully submitted that dependent Claims 2 and 17 are not made obvious by the disclosures of the Daniels and Gilliland references.

Claims 4, 14 and 19 were rejected under 35 USC § 103(a) as being obvious in view of Daniels and Gilliland, and further in view of the U.S. Patent of Rew No. 6, 411,000. Of these rejected claims, Claim 14 has been cancelled. Claim 4 depends from Claim 2 which depends from Claim 1 and Claim 19 depends from Claim 17 which depends from Claim 16.

As stated earlier, the baffle of the invention enhances cooling of an electric motor by directing air flow across the stator winding end turns of the motor with the annular lip of the baffle providing a smooth exiting flow of the cooling air out of the motor enclosure and through the baffle opening. The flow of air is drawn through the motor and through the baffle opening by operation of a cooling fan.

In contrast to the above, both the Gilliland reference and the Rew reference disclose motors with fans that draw air into the motor enclosure through what is interpreted as the claimed baffle opening, and then push the air across the motor. This is an exact opposite operation from the operation of the baffle of the invention recited in Claims 1 and 16 and the operation of the baffle 31 of the Daniels reference. In the rejections of Claims 4 and 19, Figures 5 and 8 of the Rew reference are referred to. The Rew reference makes clear that Figure 8 discloses a rounded protrusion 307't formed in the edge of an air intake 307'h of an end shield 307' that circulates air drawn in through the air intake 307'h to increase the cooling area (column 4, lines 43-46). The rotation of the axial-flow fan 306 causes the heated air inside the motor to flow to the outside of the motor through an opening in a lateral part of the motor, and the outside cooling air is drawn in through the air intakes 307h, 307'h placed in the upper and lower end shields 307, 307' (column 4, lines 56-60). Thus, the end shield disclosed in Figure 8

of the Rew reference directs air in the exact opposite manner than the baffle of the present invention recited in Claims 1 and 16 and the baffle 31 of the Daniels reference. Because the end shield of the Rew reference operates in an exact opposite manner to the baffle of the invention, the Rew reference does not make obvious to the ordinary skilled artisan the subject matter of Claims 1 and 16, or the subject matter of Claims 4 and 19 that depend from Claims 1 and 16, respectively. For this reason, it is respectfully submitted that the subject matter of Claims 4 and 19 is not made obvious to the ordinary skilled artisan by the disclosures of Daniels, Gilliland and Rew, and these claims are allowable over the prior art of record.

New Claims 25-31 have been added by this amendment. Of these new claims, Claim 25 is the only independent claim. Claim 25 also recites features of the invention that are not suggest or made obvious by the Daniels, Gilliland or Rew references.

Claim 25 recites an air cooled dynamoelectric device comprising a casing containing a stator and rotor, a fan, and a circular plate secured in the casing between the stator wiring end turns and the fan. This structural relationship between the plate and the stator and fan is not disclosed in the Rew reference which shows a fan immediately adjacent a stator with no intervening plate.

Claim 25 continues to recite that the plate has a flat interior surface that faces toward the stator and a cylindrical rim extending around the plate and projecting axially outwardly from the plate interior surface. The cylindrical rim has an annular concave surface that extends between the rim and the plate and merges into the flat interior surface of the plate.

The baffle 31 of Daniels has only a sloped surface 35 that opposes the motor stator (column 3, lines 17-19). The Daniels reference does not disclose or suggest a circular plate having an annular flat surface with a concave rim that merges into the flat surface.

The Gilliland reference discloses only a flat plate 18.

Thus, the prior art references of Daniels, Gilliland and Rew, taken alone or in combination do not disclose or suggest the subject matter of new independent Claim 25.

Therefore, new independent Claim 25 and its dependent Claims 26-31 are allowable over the prior art of record.

It is respectfully submitted that in view of the amendments and remarks presented herein, the application is in condition for allowance and favorable action is requested.

Respectfully submitted,
Thompson Coburn LLP

By: Joseph M. Rolnicki
Joseph M. Rolnicki
Reg. No. 32,653
One US Bank Plaza
St. Louis, MO 63101-1693
(314) 552-6286